

REMARKS

This paper is being provided in response to the Final Office Action dated October 28, 2010, for the above-referenced application. In this response, Applicants have amended claims 17, 23, 25, 31, 35 and 39 and added new claim 41 to clarify that which Applicants consider to be the presently-claimed invention. Applicants respectfully submit that the amendments to the claims are fully supported by the originally-filed specification, consistent with the discussion herein.

Applicants thank the Examiner for the indication of allowable subject matter in claims 23, 31 and 39. Applicants have rewritten claims 23 and 31 into independent form. Applicants have also written claim 39 into independent form incorporating the subject matter indicated by the Examiner to be allowable.

Applicants have amended the claims herein and address the rejections specifically below. Applicants have made clear in the claims that the congestion control provided by Applicants' recited system is based on delaying response to that request, that response including an acceptance notice to indicate to the first station whether the first station's message has been received and accepted. The congestion control is independent of any transmission of congestion information received by the first interconnected station. Applicants' system does not operate with congestion notices or congestion cease notices in connection with controlling congestion like that of the cited Fukuta reference. Rather, it is the delay of an acceptance notice that provides the congestion control in Applicants' system, the acceptance notice being responsive to

the request of the first station and indicating whether the first station's sent message has been received and accepted.

That is, a first station sends a message to a second interconnected station along with a request to accept that message. The first station expects to receive a response to its request that indicates whether its message has been received and accepted. Applicants' recited system provides an intermediate station that controls congestion, for example due to congestion in the downstream second station, by delaying transmission of the response (with acceptance notice) to the first station. The congestion control is not from sending a congestion notice to the first station, not from the sending of polling information to the first station, not from the sending of a congestion cease notice to the first station -- but rather, the controlled delaying of transmission of a response to the first station's request, the content of the response including an acceptance notice responsive to the first station's request that indicates to the first station whether its sent message has been received and accepted. As recited, delaying transmission of the response to the first interconnected station by the prescribed delay time causes a reduction in message throughput received by the station on the input side from the first interconnected station, for example, because the first interconnected station is waiting to receive a response to its request in order to determine whether the message the first station sent has been received.

Applicants' system is independent of transmission of congestion information to the first station, such as any congestion notice or congestion cease notice, in providing congestion control. Instead, as noted above, it is the actual delaying, by a prescribed time, of the response to

the request for acceptance of a message that controls the congestion, the amount of the delay time being controlled by the intermediate station that is recited by Applicants.

The rejection of claims 17, 25 and 35 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,090,011 to Fukuta (hereinafter "Fukuta") in view of U.S. Patent No. 5,400,329 to Tokura (hereinafter "Tokura") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein.

Independent claim 17, as amended herein, recites a station for receiving a message from a first interconnected station on an input side and transmitting message information relating to the received message to a second interconnected station on an output side. Response means is included for returning a response to a request to receive and accept the message, the request being sent from the first interconnected station. A content of the response to the request to receive and accept the message includes an acceptance notice that is responsive to the request and indicates to the first interconnected station whether the message sent from the first interconnected station was received and accepted. Congestion detection means is coupled to the response means and is for detecting that congestion has occurred in the second interconnected station, wherein, when occurrence of congestion is detected by said congestion detection means, said response means conducts congestion control by delaying the response to the request to receive and accept said message from being transmitted to the first interconnected station for a prescribed delay time, wherein delaying transmission of the response to the first interconnected station by the prescribed delay time causes a reduction in message throughput received by the station on the input side from the first interconnected station, wherein the congestion control is

provided by the delaying of the transmission of the response, that includes the acceptance notice, to the first interconnected station independent of any transmission of congestion information to the first interconnected station. Claims 18-24 and new claim 34 depends directly or indirectly from independent claim 17.

Independent claim 25, as amended herein, recites a station for receiving a message from a first interconnected station on an input side and transmitting message information relating to the received message to a second interconnected station on an output side. Response means is included for returning a response to a request to receive and accept the message, the request being sent from the first interconnected station. A content of the response to the request to receive and accept the message includes an acceptance notice that is responsive to the request and indicates to the first interconnected station whether the message sent from the first interconnected station was received and accepted. Congestion detection means is coupled to the response means and which detects the occurrence of congestion in the station when the filling ratio in a buffer memory that stores said messages or received requests that have not been completely processed exceeds a prescribed filling ratio, wherein, when the occurrence of congestion in the station is detected by said congestion detection means, said response means conducts congestion control by delaying the response to the request to receive and accept said message from being transmitted to the first interconnected station, wherein delaying transmission of the response to the first interconnected station by the prescribed delay time causes a reduction in message throughput received by the station on the input side from the first interconnected station, wherein the congestion control is provided by the delaying of the transmission of the response, that includes the acceptance notice, to the first interconnected station independent of

any transmission of congestion information to the first interconnected station. Claims 26-33 depend directly or indirectly from independent claim 25.

Independent claim 35, as amended herein, recites a station for receiving a message from a first interconnected station on an input side and transmitting message information relating to the received message to a second interconnected station on an output side. A response unit sends a response to a request to receive and accept the message, the request being sent from the first interconnected station. A content of the response to the request to receive and accept the message includes an acceptance notice that is responsive to the request and indicates to the first interconnected station whether the message sent from the first interconnected station was received and accepted. A congestion detector, coupled to the response unit, detects whether congestion has occurred in the second interconnected station, wherein, when occurrence of congestion is detected by the congestion detector, the response unit conducts congestion control by delaying the response to the request to receive and accept the message from being transmitted to the first interconnected station for a prescribed delay time, wherein delaying transmission of the response to the first interconnected station by the prescribed delay time causes a reduction in message throughput received by the station on the input side from the first interconnected station, wherein the congestion control is provided by the delaying of the transmission of the response, that includes the acceptance notice, to the first interconnected station independent of any transmission of congestion information to the first interconnected station. Claims 36-40 depend directly or indirectly from independent claim 35.

Fukuta discloses a packet congestion control method and packet switching equipment. When a packet congestion is detected in association with any one of a plurality of output lines, a congestion indicator is added to a packet to be delivered to the output line so as to return the packet as a congestion notice packet to the transmission source equipment, and the input packet is relayed via the output line to the destination equipment. (See, e.g., Fig. 12, 13 and 16 of Fukuta.)

Tokura discloses a packet network and method for congestion avoidance in packet networks. The Office Action cites to Tokura as disclosing delay for transmitting data according to a destination appointed shorter window width and decreasing a transfer rate by setting a packet transmission interval, citing to col. 10, lines 18-27 and FIGS. 1A-C and 2A-C of Tokura.

The Office Action cites to the congestion notices and cease of congestion notices in Fukuta. As noted above, Applicants have amended the claims herein to make clear that the congestion control provided by Applicants' recited system is independent of any transmission of congestion information received by the first interconnected station. Applicants' system does not operate with congestion notices or congestion cease notices in connection with controlling congestion like that of the cited Fukuta reference. Rather, it is the delay of an acceptance notice that provides the congestion control in Applicants' system, the acceptance notice being responsive to the request of the first station and indicating whether the first station's sent message has been received and accepted.

Under Applicants' claimed system, the rate at which messages are transmitted from the upstream station (first interconnected station) is controlled by a response sent from the presently-claimed station to a receive & accept request from the upstream station (first interconnected station). The presently-claimed station detects congestion at the downstream station (second interconnected station) and, in response to the detection of congestion downstream, the presently-claimed station delays the response sent to the upstream station (first interconnected station) that is sent in response to the receive & accept request. The content of the response to the request to receive and accept the message includes an acceptance notice that is responsive to the request and indicates to the first interconnected station whether the message sent from the first interconnected station was received and accepted. (See, for example, page 4, line 18 to page 5, line 11 and Fig. 4 of the originally-filed specification.)

With the above-noted system, as recited by Applicants, when congestion occurs on the output side of the presently-claimed station, the delay in transmitting the response to the receive and accept request for the prescribed delay time causes a reduction in message throughput on the input side of the presently-claimed station from the first interconnected station. (See, for example, second full paragraph on page 10 and second full paragraph on page 17 of the originally-filed specification):

Applicants maintain that Fukuta's discussion of polling during a congestion period and use of congestion notices/congestion cease notices does not teach or fairly suggest the congestion control by delaying a response to the request to receive and accept said message for a prescribed delay time, and that, indeed, Fukuta's system is specifically designed to avoid the use of a

response to request to receive and accept any message that acknowledges whether the message was received and accepted. As discussed above, Fukuta's system does not disclose delaying a response, particularly wherein delaying transmission of the response to the first interconnected station by the prescribed delay time causes a reduction in message throughput received by the station on the input side from the first interconnected station, as recited by Applicants.

Applicants submit that the addition of Tokura does not overcome the above-noted deficiencies of Fukuta with respect to the presently-claimed invention. Fukuta discloses a system for congestion control using congestion notices and congestion cease notices. Fukuta's system is not independent of transmission of congestion information like that recited by Applicants and Fukuta's system does not disclose the delaying of a response with acceptance notice to provide congestion control. Tokura's disclosure of setting a packet transmission intervals to control a packet transfer rate does not disclose, and does not overcome the above-noted deficiencies of Fukuta, with respect to Applicants' present claims. Accordingly, Applicants respectfully request that the rejections be reconsidered and withdrawn.

Although the above-noted arguments are discussed principally in connection with features of independent claim 17, Applicants submit that the other independent claims 25 and 35, and claims depending therefrom, contain similar features and, thus, the above-noted remarks apply equally to these claims. Accordingly, Applicants respectfully submit that Fukuta and Tokura, taken alone or in appropriate combination, do not teach or fairly suggest at least the above-noted features as claimed by Applicants. In view of the above, Applicants respectfully request that the rejection be reconsidered and withdrawn.

The rejection of claims 19, 20, 27, 28, 37 and 38 under 35 U.S.C. 103(a) as being unpatentable over Fukuta in view of Tokura and further in view of JP 2002-185500 to Shozo (hereinafter "Shozo") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein.

The features of independent claims 17, 25 and 35 are discussed above with respect to Fukuta and Tokura. Claims 19, 20, 27, 28, 37 and 38 depend therefrom.

Shozo discloses a communication system and determining method for setting and updating proper alternative routes in a standard network system for eliminating congestion. The Office Action cites to Shozo in connection with features involving switching means and the use of a plurality of interconnecting stations, citing to paragraphs 0016-0025 of Shozo.

Applicants respectfully submit that Shozo does not overcome the above-noted deficiencies of Fukuta and Tokura with respect to Applicants' presently-claimed invention. Shozo does not disclose, nor is Shozo cited in the Office Action in connection with, Applicants' recited features that are discussed above with respect to Fukuta and Tokura. Accordingly, Applicants respectfully submit that Fukuta, Tokura and Shozo, taken alone or in any combination, do not teach or fairly suggest at least the above-noted features as recited by Applicants. In view of the above, Applicants respectfully request that the rejection be reconsidered and withdrawn.

The rejection of claims 21, 22, 29 and 30 under 35 U.S.C. 103(a) as being unpatentable over Fukuta in view of Tokura and further in view of SMS Forum, "Short Message Peer to Peer Protocol Specification" (hereinafter "SMS Forum") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein.

The features of independent claims 17 and 25 are discussed above with respect to Fukuta and Tokura. Claims 21, 22, 29 and 30 depend therefrom.

SMS Forum discloses a short message peer-to-peer (SMPP) protocol. The Office Action cites to as disclosing flow control and congestion avoidance including the use of an error and/or a parameter concerning a congestion state, citing principally to page 43 of SMS Forum.

Applicants respectfully submit that SMS Forum does not overcome the above-noted deficiencies of Fukuta and Tokura with respect to Applicants' presently-claimed invention. SMS Forum does not disclose, nor is SMS Forum cited in the Office Action in connection with, Applicants' recited features that are discussed above with respect to Fukuta and Tokura. Accordingly, Applicants respectfully submit that Fukuta, Tokura and SMS Forum, taken alone or in any combination, do not teach or fairly suggest at least the above-noted features as recited by Applicants. In view of the above, Applicants respectfully request that the rejection be reconsidered and withdrawn.

The rejection of claims 18, 24, 26, 32, 36 and 40 under 35 U.S.C. 103(a) as being unpatentable over Fukuta in view of Tokura and further in view of U.S. Patent No. 5,757,772 to

Thornberg (hereinafter "Thornberg") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein.

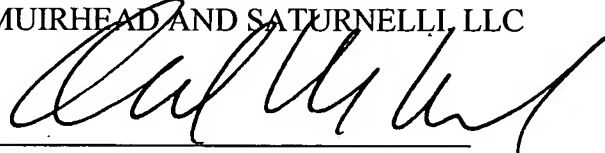
The features of independent claims 17, 25 and 35 are discussed above with respect to Fukuta and Tokura. Claims 18, 24, 26, 32, 36 and 40 depend therefrom.

Thornberg discloses a method and system for packet switched radio channel traffic supervision. The Office Action cites to Thornberg as disclosing congestion evaluation use average response times and margin ratios, citing principally to col. 2, lines 18-31, col. 16, lines 47-57 and FIGS. 8A and 11 of Thornberg.

Applicants respectfully submit that Thornberg does not overcome the above-noted deficiencies of Fukuta and Tokura with respect to Applicants' presently-claimed invention. Thornberg does not disclose, nor is Thornberg cited in the Office Action in connection with, Applicants' recited features that are discussed above with respect to Fukuta and Tokura. Accordingly, Applicants respectfully submit that Fukuta, Tokura and Thornberg, taken alone or in any combination, do not teach or fairly suggest at least the above-noted features as recited by Applicants. In view of the above, Applicants respectfully request that the rejection be reconsidered and withdrawn.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
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